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Chart show  
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As shown in the upper panel of your next chart, we're projecting that the growth in potential output over the next year and a half will remain at the 1.9 percent annual pace that we estimate has prevailed since the cyclical peak in 1990. That projection is composed of nearly equal contributions from the growth of labor input--line 2--and the growth of productivity--line 3.

Taken at face value, the published figures for productivity in the nonfarm business sector point to a sharper slowdown in productivity since 1990 than we have assumed--perhaps to about 3/4 percentage point per year. However, as we have noted previously in the Greenbook, we are anticipating that real output and, hence productivity, will be revised up in this summer's annual revisions to the national income accounts by enough to support our 0.9 percent estimated trend--plotted in red in the middle panel. But in the absence of any clear signs in the data of an increased pace of efficiency gains or a greater pick up in capital deepening, we have been reluctant to project a still higher trend going forward.

The acceleration in economic activity over the past year likely has provided a boost to output per hour. However, next year, we anticipate that productivity will rise a bit more slowly--gradually approaching its longer-term trend--as activity decelerates and firms reach deeper into the diminishing pool of qualified workers.

Abundant job opportunities have been drawing people into the labor force at a rapid clip over the past year. The labor force participation rate--shown in the lower left panel--moved above 67 percent in recent months, up about 1/2 percentage point from a

year ago. And in the context of our projection of some further tightening of labor markets, we anticipate that the participation rate will continue to edge up over the next six quarters.

As shown at the right, the resulting labor force growth is expected to remain above its 1 percent trend over the projection period. Even so, the projected strength of economic activity this year and smaller productivity gains in 1998 cause employment growth--the second column--to outstrip the expansion of the labor force over the forecast period.

As a consequence, the unemployment rate--shown in the upper left panel of chart 12-- falls to close to 4-1/2 percent by early next year. Other indicators of labor market conditions are showing similar signs of tautness. For example, in the Conference Board survey--the upper right panel--the number of households reporting that jobs are plentiful exceed by a wide margin those reporting that jobs are hard to get. In addition, the help we've been getting from decelerating health insurance costs may be coming to an end. The results of a Peat Marwick survey of large firms are presented in the middle left panel. These firms report larger increases in health insurance premiums in 1997 than in 1996. Although these increases are small and could be offset by lower wage gains, health care costs are unlikely to be as favorable an influence going forward as they have been in the recent past.

In our view, these factors already have left some imprint on compensation inflation--plotted as the black line in the lower panel. And with the unemployment rate projected to move still lower, a further mild acceleration is expected over the next year and a half. That this process has not gained any perceptible momentum likely reflects the

fact that, while tightness in labor markets may be boosting hourly compensation costs a bit more quickly, we have yet to witness any increase in inflation expectations--a necessary ingredient of a conventional wage-price spiral. Indeed, the Michigan survey of inflation expectations--shown in the middle right panel--has basically been moving sideways for some time now.

To a large extent, developments in product markets appear, thus far, to have short circuited this feedback mechanism. Two key factors, declining non-oil import prices and ample manufacturing plant capacity, are highlighted in the upper panels of your next exhibit. As shown in the left hand panel, non-oil import prices dropped 3 percent last year and appear to have declined at a similar pace over the first half of this year. For the reasons that Ted discussed earlier, we are expecting these declines to give way to increases later this year and into the next, weakening one of the factors that has suppressed price inflation over the past year and half.

Another favorable influence has been healthy growth of capacity, which has kept the factory utilization rate close to its historical average, and by our assessment, a largely neutral influence on price pressures in the goods sector. Moreover, we are anticipating that utilization rates will edge down over the projection interval, as manufacturing investment plans are only gradually scaled back in response to the weakening of sales, profits, and cash flow that we have projected for this sector.

Owing to these restraining influences, the cyclically adjusted markup of prices over unit labor costs in the nonfarm business sector--plotted in the middle panel--is expected to drift down somewhat over the forecast period. As a consequence, we are projecting only

a very modest upturn in broad measures of price inflation--shown in the lower panels. GDP prices--the black line--are projected to pick up from a 2 percent increase in 1996 to a 2-1/4 percent increase this year and 2-1/2 percent increase next year. The sharp slowing in food and energy prices under way this year, which receives a much larger weight in PCE prices--the red line--results in lower consumption price inflation this year before moving up to a 2-1/2 percent pace in 1998.

Obviously, there are considerable risks that lie on both sides of our inflation projection. One risk is that current and prospective labor market tightness will leave a clearer mark on the inflation process going forward than has been apparent over the past year. And, if the price news turns less favorable, the feedback into inflation expectations and labor costs could be more abrupt.

Another risk, which has received considerable attention, is the possibility that fundamental changes are taking place in the economy that have raised underlying productivity growth and restrained inflation. The implications of such an acceleration in productivity are the subject of your next two charts. In the upper panel of chart 14, I have plotted productivity in the nonfinancial corporate sector of the economy. This sector covers a bit more than half of GDP and may be less susceptible to measurement error than the financial and non-corporate sectors of the economy. Much like the broader nonfarm business measure I showed in chart 11, there are no clear-cut signs that the trend in productivity of this sector has improved. But over the past two years--a period I have highlighted in red on the chart--productivity has increased at nearly a 3 percent annual rate, well above its 1-1/2 percent historical trend--the black dashed line.

If one wished to take an optimistic slant, such an upturn could be viewed as hinting at an improving productivity performance.

You, of course, are quite familiar with the suspects in this story--rapid investment in new technologies, the payoff from corporate restructurings, and the imperative to innovate in response to an increasingly competitive world economy. I would note one additional possibility--low and stable inflation. If some acceleration of productivity is under way, the reduction in inflation and inflation uncertainty in recent years may have played an important supporting role.

The lower panel of the exhibit outlines the effects that a step-up in the productivity growth trend would have on both the supply and demand sides of the economy. On the supply side, an increase in the pace of productivity growth will initially raise business profitability by enabling firms to produce more with less. However, competitive pressures soon would emerge that force down price inflation to better reflect the slower growth in the costs of production. In labor markets, real wages rise more rapidly through some combination of lower price inflation and larger nominal wage gains.

On the demand side of the economy, technological improvements boost business investment, as firms seek to take advantage of profitable opportunities. Households also raise spending as more rapid growth in both capital and labor income lead to upward revisions in their estimate of trend--or so-called permanent--income. Needless to say, there are similarities between these supply- and demand-side effects and some recent economic developments.

In your next chart, I present simulations of our econometric model that lay out the effects on some key economic variables of a permanent increase in productivity growth of 1/2 percentage point per year starting in 1997. For this exercise, I have considered two alternative policy responses, which illustrate some of the tradeoffs you would face under these circumstances. In one case, I assume that monetary policy stabilizes the unemployment rate at its baseline path, thus allowing the effects of the higher productivity growth to show through into permanently lower inflation. The second case assumes that policy attempts to stabilize the long-run inflation rate and allows the unemployment rate to fall temporarily. These alternatives are shown as deviations from baseline in the upper four panels, with the inflation targeting case shown in red and the unemployment targeting case shown in blue. In the lower table, I show the extended Greenbook forecast and the consequences of more rapid productivity growth for inflation and unemployment under the two alternative policy responses.

As you can see in the upper left hand panel, an unanticipated increase in the rate of productivity growth of 1/2 percentage point per year initially results in a reduction in price inflation under either policy. In the inflation-targeting case, the nominal funds rate--the red line in the middle left panel--is unchanged until 1999. During this period, both inflation and the unemployment rate--the red lines in the upper two panels--move lower. The boom in demand drives up output and reduces the unemployment rate. But, for a while, productivity gains offset the cost pressures associated with larger wage gains and, consequently, price inflation declines. In effect, the acceleration in productivity creates a transitory drop in the NAIRU. By 1999, however, price inflation moves back up toward

baseline as labor costs are boosted, in part, by tight labor markets. In addition, the larger real wage demands that follow the more rapidly rising productivity effectively reverse the decline in the NAIRU and further boost labor cost increases. In fact, to prevent inflation from moving above baseline, the nominal federal funds rate must be raised by about 3/4 percentage point between 1999 and 2001.

In the second case, to stabilize the unemployment rate--the blue line in the four panels--the nominal federal funds rate is raised immediately to lean against the emerging strength of aggregate demand. Taken together, the increase in nominal rates and the decline in price inflation result in a more rapid rise in the real interest rate--the blue line in the middle right panel--than occurs in the inflation-targeting case. Under these circumstances, the improvement in productivity shows through to a permanently lower rate of price inflation--the upper left panel--by about the 1/2 percentage point increase in the growth of productivity.

In the end, the policy choice comes down to a tradeoff between, on the one hand, permanently lower inflation and, on the other hand, unchanged inflation but an extended--if temporary--period of lower unemployment. Clearly, supply shocks--good ones as well as bad ones--confront policymakers with some difficult decisions. However, if we are fortunate enough to be facing this situation, your choices will be between some very attractive outcomes.

The final chart in our presentation displays your forecasts for 1997 and 1998. As shown in the upper panel, you have revised up your estimates of real GDP growth for this year and, correspondingly, revised down your estimates of the level of the unemployment

rate in the fourth quarter of this year. At the same time, however, you have revised down your CPI projections for 1997. As shown in the lower panel, for 1998, you anticipate a considerable slowing in the growth of real GDP; the unemployment rate is expected to hold steady; and CPI inflation is projected to edge up.